

REMARKS

The non-final Office Action (NFOA) mailed December 9, 2008, has been carefully considered, and these remarks are responsive thereto. Claims 1-16 were pending in the application of which claims 9-16 were withdrawn as comprising a non-elected species of an Election/Restriction requirement mailed June 26, 2008. Claims 1-8 are rejected.

Claims 1 and 5-7 have been amended. Claim 1 has been amended to relate to an embodiment “wherein the oxidizing gas is a mixed gas of hydrogen and oxygen.” See support therefor and advantages thereof, for example, with reference to FIGS. 5A and 5B and paragraph [0079] of the present application published as US 2007/0026642. Claims 5-7 have been amended to correct their dependency to be from claim 1 due to cancellation of claims 2-4. Claim 7 has been amended to describe the feature “the interlayer insulating film is formed of a coating solution including polysiloxane having an organic functional group.” Support for this feature is found, for example, at paragraphs [0045] and [0057] to [0058] of the present application published as US 2007/0026642. Both of these features result in “improved adhesiveness of the interlayer insulating film, so that the interlayer insulating film can more tightly adhere to a hardmask” (paragraph [0079] for claim 7) or “modification of a surface of an interlayer insulating film by means of hydrogen and oxygen can improve adhesiveness of the interlayer insulating film, so that the interlayer insulating film can more tightly adhere to a hardmask” (paragraph [0058], claim 1). Consequently, it is respectfully submitted that the recitations of claim 1 and claim 7 are not mere design choices but have been achieved through experimentation with multiple alternatives so as to provide a structure and related advantages not described by the prior art. Applicant has carefully studied Inouer (US 5,976,966) an Murkami et al. (US 2003/0087042) to the result that neither discusses the structure nor advantages of claims 1 and 7 as amended.

The undersigned counsel for Applicants notes that in the Office Action Summary under Application Papers, box 10, there is no indication of acceptance or objection to the formal drawings submitted with the application papers. It is noted that the present application has published as US 2007/0166657 on July 19, 2007. Moreover, the drawings thereof appear to be in form for acceptance as published. The Examiner is requested to note their acceptance of the drawings or an objection in a next office action or notice of allowance.

Also, Applicants wish to bring to the attention of the Examiner an Information Disclosure Statement filed December 17, 2008. Applicants request that the Examiner indicate consideration of the cited references in a next office action or notice of allowance. The **DETAILED ACTION** section will now be discussed in turn. The Examiner first discusses the status of claims 1-16 and the withdrawal of claims 9-16 under ***Elections/Restrictions***. The Examiner then discusses the ***Specification***.

Specification

The Examiner properly notes that the present ABSTRACT begins with “The present invention relates to” and suggests its deletion. Applicant has reviewed an ABSTRACT associated with PCT/JP2004/005641, published as WO/2004/095563 and modified the ABSTRACT to be more descriptive and to be sure to comply with the proper language and format for an abstract of the disclosure. Applicant believes that the new ABSTRACT so complies and requests withdrawal of the objection to the ABSTRACT.

The Examiner also notes that the title of the invention is not descriptive: “the claimed invention is directed solely to a method.” Applicant agrees that, exclusive of the claims that have been withdrawn, the present set of claims is directed to a method and so suggests the title: “A Surface Modification Method for Interlayer Insulating Film.” However, Applicant wishes to reserve the right to return to the original title if withdrawn apparatus claims are examined, for example, due to amendments to the method claims.

Claim Rejections – 35 U.S.C. 112

The Examiner has rejected claim 7 as indefinite for use of the term “low dielectric.” The rejection has been rendered moot by the omission of the term “low dielectric” from claim 7. The rejection is traversed to the extent that the Examiner states “the specification does not provide a standard for ascertaining the requisite degree.” FIG. 8, for example, provides a specific example of the constancy of a dielectric constant via Example 1 and a comparative Example 1, for example, the values (between 2.0 and 2.5) show little variation. The Examiner is requested to withdraw any objection to the specification that the specification is silent on “low dielectric.”

Claim Rejections – 35 U.S.C. 103

The Examiner has rejected claims 1-7 as unpatentable over US Patent No. 5,976,966 to Inoue in view of U.S. Published Application 2003/0087042 to Murakami et al. The Examiner admits that Inoue fails to apply a solution to form the interlayer insulating film. Consequently, the Examiner relies on Murakami. The Examiner alleges that Murakami describes an organic silane solution of organic silane, water and an alcohol. Inoue is cited with respect to claim 2 for suggesting water vapor.

To the contrary, as described above enhanced adhesiveness is achieved via the present set of claims and neither Inoue or Murakami describe the structure of claim 1 as amended “wherein the oxidizing gas is a mixed gas of hydrogen and oxygen.” Claims 5 and 6 are allowable for the same reasons that claim 1 as amended is allowable. Moreover, neither Inoue or Murakami describe the structure of claim 7 as amended: “the interlayer insulating film is formed of a coating solution including polysiloxane having an organic functional group.”

Claim 8 stands rejected in further view of JP 52-111385. Admittedly, polysiloxane is known in a vertical junction field effect transistor having high drain-gate breakdown voltage. However, the Examiner is utilizing improper hindsight in rejecting claim 8. There is no teaching of “the interlayer insulating film is formed of a coating solution including polysiloxane having an organic functional group.” Moreover, there must be a reason to combine the ‘385 patent with Inoue or Murakami to achieve a method for modifying a surface of an interlayer insulating film as recited. Applicant respectfully submits that, while the rejection of claim 8 is rendered moot

by its cancellation, the allegations made by the Examiner from the limited English language Abstract of the '385 reference fail to describe "the interlayer insulating film is formed of a coating solution including polysiloxane having an organic functional group."

Applicants respectfully submit that they have overcome the separate rejections of claims 1-7 and of claim 8 and request that the rejections be withdrawn.

Consequently, Applicant urges that claims 1 and 5-7 are in condition for allowance and looks forward to passage to issue of the present application with the next official action.

If any additional fees are due in connection with this filing, the Commissioner is authorized to charge the fees to SGR Deposit Account No. 02-4300. Please credit any overpayment to SGR Deposit Account No. 02-4300, Order No. 033082M287.

Respectfully submitted,
SMITH, GAMBRELL & RUSSELL, LLP

By: /Thomas H. Jackson/
Thomas H. Jackson, Reg. No. 29,808
1130 Connecticut Avenue, NW - Suite 1130
Washington, D.C. 20036
Telephone: (202) 263-4300
Facsimile: (202) 263-4329

Enclosure: Replacement Sheet ABSTRACT

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